Author index for papers in Volume 42

Pages are numbered consecutively through the volume: 1–160, January; 161–312, March; 313–560, May/July; 561–722, September; and 723–874, November.

Allenspach, R., and W. Weber
7 *Oscillatory magnetic properties*

Alt, P. M., and K. Noda
315 *Increasing electronic display information content: An introduction*

Alt, P. M.
321 see Melcher, R. L.

Alt, P. M.
411 see Sanford, J. L.

Alt, P. M.
427 see Colgan, E. G.

Alt, P. M.
445 see Wright, S. L.

Anderson, R. E., E. M. Foster, D. E. Franklin, and R. S. Svec
795 *Integrating the MPEG-2 subsystem for digital television*

Andricacos, P. C., C. Uzoh, J. O. Dukovic, J. Horkans, and H. Deligianni
567 *Damascene copper electroplating for chip interconnections*

Andricacos, P. C., and N. Robertson
671 *Future directions in electroplated materials for thin-film recording heads*

Arai, T., H. Iiyori, Y. Hiromasu, M. Atsumi, S. Ioku, and K. Furuta
491 *Aluminum-based gate structure for active-matrix liquid crystal displays*

Asakawa, Y.
199 see Sanuki, T.

Atsumi, M.
491 see Arai, T.

Auerbach, D. J.
807 see Kemp, T. M.

Babich, I. V.
681 see O'Sullivan, E. J.

Bailey, P. J.
607 see O'Sullivan, E. J.

Bergman, L. D.
253 see Castelli, V.

Bisdikian, C., S. Brady, Y. N. Doganata, D. A. Foulger, F. Marconcini, M. Mourad, H. L. Operowsky, G. Pacifici, and A. N. Tantawi
281 *MultiMedia Digital Conferencing: A Web-enabled multimedia teleconferencing system*

Bolle, R. M., B.-L. Yeo, and M. M. Yeung
233 *Video query: Research directions*

Brady, S.
281 see Bisdikian, C.

Burroughs, S. H., and T. R. Lattrell
725 *Data compression technology in ASIC cores*

Cabral, C., Jr.
501 see Takatsuji, H.

Castelli, V., L. D. Bergman, I. Kontoyiannis, C.-S. Li, J. T. Robinson, and J. J. Turek
253 *Progressive search and retrieval in large image archives*

Chainer, T. J.
681 see O'Sullivan, E. J.

Chaudhari, P.
537 see Lien, S.-C. A.

Chiu, G. L.-T.
387 see Doany, F. E.

Cipolla, T. M.
321 see Melcher, R. L.

Colgan, E. G., and M. Uda
339 *On-chip metallization layers for reflective light valves*

Colgan, E. G., P. M. Alt, R. L. Wisnieff, P. M. Fryer, E. A. Galligan, W. S. Graham, P. F. Greier, R. R. Horton, H. Ifill, L. C. Jenkins, R. A. John, R. I. Kaufman, Y. Kuo, A. P. Lanzetta, K. F. Latzko, F. R. Libsch, S.-C. A. Lien, S. E. Millman, R. W. Nywening, R. J. Polastre, C. G. Powell, R. A. Rand, J. J. Ritsko, M. B. Rothwell, J. L. Staples, K. W. Warren, J. S. Wilson, and S. L. Wright
427 *A 10.5-in.-diagonal SXGA active-matrix display*

Colgan, E. G., R. J. Polastre, M. Takeichi, and R. L. Wisnieff
481 *Thin-film-transistor process-characterization test structures*

Colgan, E. G.
321 see Melcher, R. L.

Colgan, E. G.
501 see Takatsuji, H.

Colyer, P. S., and J. L. Mitchell
785 *The IBM JBIG–ABIC Verification Suite*

Cooper, E. I.
681 see O'Sullivan, E. J.

Cotte, J. M.
681 see O'Sullivan, E. J.

Craft, D. J.
733 *A fast hardware data compression algorithm and some algorithmic extensions*

Dan, A., S. I. Feldman, and D. N. Serpanos
162 *Preface*

Dan, A., S. I. Feldman, and D. N. Serpanos
177 *Evolution and challenges in multimedia*

Datta, M.
563 *Applications of electrochemical microfabrication: An introduction*

Datta, M.
655 *Microfabrication by electrochemical metal removal*

DeHaven, P. W.
587 see Wong, K. K. H.

Deligianni, H.
567 see Andricacos, P. C.

Doany, F. E., R. N. Singh, A. E. Rosenbluth, and G. L.-T. Chiu
387 *Projection display throughput: Efficiency of optical transmission and light-source collection*

Doany, F. E.
321 see Melcher, R. L.

Doany, F. E.
359 see Rosenbluth, A. E.

Doganata, Y. N.
281 see Bisdikian, C.

Dove, D. B.
321 see Melcher, R. L.

Dove, D. B.
359 see Rosenbluth, A. E.

Dukovic, J. O.
567 see Andricacos, P. C.

Duncombe, P. R.
89 see Sun, J. Z.

Enami, K.
321 see Melcher, R. L.

Enami, K.
347 see Sanford, J. L.

Farrow, R. F. C.
43 *The role of molecular beam epitaxy in research on giant magnetoresistance and interlayer exchange coupling*

Feldman, S. I.
162 see Dan, A.

Feldman, S. I.
177 see Dan, A.

Flynn, R. J., and W. H. Tetzlaff
165 *Multimedia—An introduction*

Fontana, R. E., Jr.
103 see Tsang, C. H.

Foster, E. M.
795 see Anderson, R. E.

Foulger, D. A.
281 see Bisdikian, C.

Franklin, D. E.
795 see Anderson, R. E.

Fryer, P. M.
427 see Colgan, E. G.

Furuta, K.
491 see Arai, T.

Galligan, E. A.
427 see Colgan, E. G.

Giri, A. P.
597 see Perfecto, E. D.

Graham, W. S.
427 see Colgan, E. G.

Greier, P. F.
411 see Sanford, J. L.

Greier, P. F.
427 see Colgan, E. G.

Greier, P. F.
445 see Wright, S. L.

Gupta, A.
89 see Sun, J. Z.

Gurney, B. A.
103 see Tsang, C. H.

Harper, J. D.
807 see Kemp, T. M.

Harper, J. M. E.
501 see Takatsuji, H.

Haskin, R. L.
185 *Tiger Shark—A scalable file system for multimedia*

Hegde, S. G.
681 see O'Sullivan, E. J.

Heim, D. E.
103 see Tsang, C. H.

Himpsel, F. J., T. A. Jung, and P. F. Seidler
33 *Electronic states in magnetic nanostructures*

Hiromasu, Y.
491 see Arai, T.

Ho, K. C.
321 see Melcher, R. L.

Hoffnagle, J. A.
411 see Sanford, J. L.

Horkans, J.
621 *Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders*

Horkans, J.
567 see Andricacos, P. C.

Horkans, J.
681 see O'Sullivan, E. J.

Horton, R. R.
427 see Colgan, E. G.

Horton, R. R.
445 see Wright, S. L.

Ifill, H.
427 see Colgan, E. G.

Iiyori, H.
491 see Arai, T.

Ioku, S.
491 see Arai, T.

Iwama, H.
509 see Tsuji, S.

Jahnes, C. V.
681 see O'Sullivan, E. J.

Jeanneret, M. P.
597 see Perfecto, E. D.

Jenkins, L. C.
427 see Colgan, E. G.

John, R. A.
427 see Colgan, E. G.

John, R. A.
537 see Lien, S.-C. A.

Jones, B. A.
25 *Theory of exchange coupling in magnetic multilayers*

Jung, T. A.
33 see Himpsel, F. J.

Kaja, S.
587 see Wong, K. K. H.

Kaja, S.
607 see O'Sullivan, E. J.

Kampf, F. A.
759 *Performance as a function of compression*

Kampf, F. A.
747 see Slattery, M. J.

Kaufman, R. I.
427 see Colgan, E. G.

Kemp, T. M., R. K. Montoye, J. D. Harper, J. D. Palmer, and D. J. Auerbach
807 *A decompression core for PowerPC*

Kimura, S.
459 see Kusafuka, K.

Kodate, M.
445 see Wright, S. L.

Kohl, P. A.
629 *Photoelectrochemical etching of semiconductors*

Kontoyiannis, I.
253 see Castelli, V.

Krongelb, S., L. T. Romankiw, and J. A. Tornello
575 *Electrochemical process for advanced package fabrication*

Krongelb, S.
681 see O'Sullivan, E. J.

Krusin-Elbaum, L.
89 see Sun, J. Z.

Kumar, K. G.
269 see Willebeek-LeMair, M. H.

Kumar, M.
219 *Video-server designs for supporting very large numbers of concurrent users*

Kuo, Y.
427 see Colgan, E. G.

Kusafuka, K., H. Shimizu, and S. Kimura
459 *Driving method for gate-delay compensation of TFT/LCD*

Kwietniak, K. T.
681 see O'Sullivan, E. J.

LaBianca, N. C.
681 see O'Sullivan, E. J.

Lacey, J. A.
537 see Lien, S.-C. A.

Lanzetta, A. P.
427 see Colgan, E. G.

Lattrell, T. R.
725 see Burroughs, S. H.

Latzko, K. F.
427 see Colgan, E. G.

Li, C.-S.
253 see Castelli, V.

Libsch, F. R., and S.-C. A. Lien
467 *Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays*

Libsch, F. R.
347 see Sanford, J. L.

Libsch, F. R.
427 see Colgan, E. G.

Lien, S.-C. A., P. Chaudhari, J. A. Lacey, R. A. John, and J. L. Speidell
537 *Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment*

Lien, S.-C. A.
427 see Colgan, E. G.

Lien, S.-C. A.
467 see Libsch, F. R.

Lin, T.
103 see Tsang, C. H.

Longworth, H. P.
597 see Perfecto, E. D.

Lovas, I.
321 see Melcher, R. L.

Lu, M.
359 see Rosenbluth, A. E.

Lu, M.
401 see Yang, K. H.

Lu, M.
411 see Sanford, J. L.

Mamiya, J.
527 see Tanase, H.

Marconcini, F.
281 see Bisdikian, C.

Marino, J. R.
607 see O'Sullivan, E. J.

Marks, K. M.
753 *A JBIG–ABIC compression engine for digital document processing*

Matick, R. E.
813 *Modular nets (MNETS): A modular design methodology for computer timers*

Melcher, R. L., P. M. Alt, D. B. Dove, T. M. Cipolla, E. G. Colgan, F. E. Doany, K. Enami, K. C. Ho, I. Lovas, C. Narayan, R. S. Olyha, Jr., C. G. Powell, A. E. Rosenbluth, J. L. Sanford, E. S. Schlig, R. N. Singh, T. Tomooka, M. Uda, and K. H. Yang
321 *Design and fabrication of a prototype projection data monitor with high information content*

Melcher, R. L.
411 see Sanford, J. L.

Millman, S. E.
427 see Colgan, E. G.

Mitchell, J. L.
767 see Slattery, M. J.

Mitchell, J. L.
785 see Colyer, P. S.

Montoye, R. K.
807 see Kemp, T. M.

Mourad, M.
281 see Bisdikian, C.

Nakajima, R.
73 see Stöhr, J.

Narayan, C.
321 see Melcher, R. L.

Narayan, C.
411 see Sanford, J. L.

Narayan, C.
445 see Wright, S. L.

Nesbet, R. K.
53 *Theory of spin-dependent conductivity in GMR materials*

Nishida, H., K. Sakamoto, Hideki Ogawa, and Hiromi Ogawa
517 *Micropitch connection using anisotropic conductive materials for driver IC attachment to a liquid crystal display*

Noda, K.
315 see Alt, P. M.

Nywening, R. W.
427 see Colgan, E. G.

O'Sullivan, E. J., A. G. Schrott, M. Paunovic, C. J. Sambucetti, J. R. Marino, P. J. Bailey, S. Kaja, and K. W. Semkow
607 *Electrolessly deposited diffusion barriers for microelectronics*

O'Sullivan, E. J., E. I. Cooper, L. T. Romankiw, K. T. Kwietniak, P. L. Trouilloud, J. Horkans, C. V. Jahnes, I. V. Babich, S. Krongelb, S. G. Hegde, J. A. Tornello, N. C. LaBianca, J. M. Cotte, and T. J. Chainer
681 *Integrated, variable-reluctance magnetic minimotor*

Ogawa, Hideki
517 see Nishida, H.

Ogawa, Hiromi
517 see Nishida, H.

Olyha, R. S., Jr.
321 see Melcher, R. L.

Olyha, R. S., Jr.
411 see Sanford, J. L.

Operowsky, H. L.
281 see Bisdikian, C.

Pacifici, G.
281 see Bisdikian, C.

Palmer, J. D.
807 see Kemp, T. M.

Parkin, S. S. P.
3 *The magic of magnetic multilayers*

Parkin, S. S. P.
89 see Sun, J. Z.

Paunovic, M.
607 see O'Sullivan, E. J.

Pennacchia, J. R.
597 see Perfecto, E. D.

Perfecto, E. D., A. P. Giri, R. R. Shields, H. P. Longworth, J. R. Pennacchia, and M. P. Jeanneret
597 *Thin-film multichip module packages for high-end IBM servers*

Polastre, R. J.
427 see Colgan, E. G.

Polastre, R. J.
481 see Colgan, E. G.

Powell, C. G.
321 see Melcher, R. L.

Powell, C. G.
427 see Colgan, E. G.

Rand, R. A.
427 see Colgan, E. G.

Ritsko, J. J.
427 see Colgan, E. G.

Robertson, N.
671 see Andricacos, P. C.

Robinson, J. T.
253 see Castelli, V.

Romankiw, L. T.
575 see Krongelb, S.

Romankiw, L. T.
681 see O'Sullivan, E. J.

Rosenbluth, A. E., D. B. Dove, F. E. Doany, R. N. Singh, K. H. Yang, and M. Lu
359 *Contrast properties of reflective liquid crystal light valves in projection displays*

Rosenbluth, A. E.
321 see Melcher, R. L.

Rosenbluth, A. E.
387 see Doany, F. E.

Rothwell, M. B.
427 see Colgan, E. G.

Sakamoto, K.
517 see Nishida, H.

Sambucetti, C. J.
607 see O'Sullivan, E. J.

Sanford, J. L., E. S. Schlig, T. Tomooka, K. Enami, and F. R. Libsch
347 *Silicon light-valve array chip for high-resolution reflective liquid crystal projection displays*

Sanford, J. L., P. F. Greier, K. H. Yang, M. Lu, R. S. Olyha, Jr., C. Narayan, J. A. Hoffnagle, P. M. Alt, and R. L. Melcher
411 *A one-megapixel reflective spatial light modulator system for holographic storage*

Sanford, J. L.
321 see Melcher, R. L.

Sanuki, T., and Y. Asakawa
199 *Design of a video-server complex for interactive television*

Schlig, E. S.
321 see Melcher, R. L.

Schlig, E. S.
347 see Sanford, J. L.

Schrott, A. G.
607 see O'Sullivan, E. J.

Seidler, P. F.
33 see Himpsel, F. J.

Semkow, K. W.
607 see O'Sullivan, E. J.

Serpanos, D. N.
162 see Dan, A.

Serpanos, D. N.
177 see Dan, A.

Sheppard, K. G.
639 see von Gutfeld, R. J.

Shields, R. R.
597 see Perfecto, E. D.

Shimizu, H.
459 see Kusafuka, K.

Singh, R. N.
321 see Melcher, R. L.

Singh, R. N.
359 see Rosenbluth, A. E.

Singh, R. N.
387 see Doany, F. E.

Slattery, M. J., and F. A. Kampf
747 *Design considerations for the ALDC cores*

Slattery, M. J., and J. L. Mitchell
767 *The Qx-coder*

Snible, E. C.
269 see Willebeek-LeMair, M. H.

Speidell, J. L.
537 see Lien, S.-C. A.

Staples, J. L.
427 see Colgan, E. G.

Stöhr, J., and R. Nakajima
73 *Magnetic properties of transition-metal multilayers studied with X-ray magnetic circular dichroism spectroscopy*

Sun, J. Z., L. Krusin-Elbaum, A. Gupta, G. Xiao, P. R. Duncombe, and S. S. P. Parkin
89 *Magnetotransport in doped manganate perovskites*

Suzuki, M.
527 see Tanase, H.

Svec, R. S.
795 see Anderson, R. E.

Takatsuji, H., E. G. Colgan, C. Cabral, Jr., and J. M. E. Harper
501 *Evaluation of Al(Nd)-alloy films for application to thin-film-transistor liquid crystal displays*

Takeichi, M.
481 see Colgan, E. G.

Tanase, H., J. Mamiya, and M. Suzuki
527 *A new backlighting system using a polarizing light pipe*

Tantawi, A. N.
281 see Bisdikian, C.

Tetzlaff, W. H.
165 see Flynn, R. J.

Tomooka, T.
321 see Melcher, R. L.

Tomooka, T.
347 see Sanford, J. L.

Tornello, J. A.
575 see Krongelb, S.

Tornello, J. A.
681 see O'Sullivan, E. J.

Trouilloud, P. L.
681 see O'Sullivan, E. J.

Tsang, C. H., R. E. Fontana, Jr., T. Lin, D. E. Heim, B. A. Gurney, and M. L. Williams
103 *Design, fabrication, and performance of spin-valve read heads for magnetic recording applications*

Tsuji, S., K. Tsujimoto, and H. Iwama
509 *Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis*

Tsujimoto, K.
509 see Tsuji, S.

Turek, J. J.
253 see Castelli, V.

Uda, M.
321 see Melcher, R. L.

Uda, M.
339 see Colgan, E. G.

Uzoh, C.
567 see Andricacos, P. C.

von Gutfeld, R. J., and K. G. Sheppard
639 *Electrochemical microfabrication by laser-enhanced photothermal processes*

Warren, K. W.
427 see Colgan, E. G.

Warren, K. W.
445 see Wright, S. L.

Weber, W.
7 see Allenspach, R.

Willebeek-LeMair, M. H., K. G. Kumar, and E. C. Snible
269 *Bamba—Audio and video streaming over the Internet*

Williams, M. L.
103 see Tsang, C. H.

Wilson, J. S.
427 see Colgan, E. G.

Wisnieff, R. L.
427 see Colgan, E. G.

Wisnieff, R. L.
481 see Colgan, E. G.

Wong, K. K. H., S. Kaja, and P. W. DeHaven
587 *Metallization by plating for high-performance multichip modules*

Wright, S. L., K. W. Warren, P. M. Alt, R. R. Horton, C. Narayan, P. F. Greier, and M. Kodate
445 *Active line repair for thin-film-transistor liquid crystal displays*

Wright, S. L.
427 see Colgan, E. G.

Xiao, G.
89 see Sun, J. Z.

Yang, K. H., and M. Lu
401 *Nematic LC modes and LC phase gratings for reflective spatial light modulators*

Yang, K. H.
321 see Melcher, R. L.

Yang, K. H.
359 see Rosenbluth, A. E.

Yang, K. H.
411 see Sanford, J. L.

Yeo, B.-L.
233 see Bolle, R. M.

Yeung, M. M.
233 see Bolle, R. M.

Ziegler, J. F.
117 *Terrestrial cosmic ray intensities*

Subject index for papers in Volume 42

Each index entry below is accompanied by an author's name and a page number; the author index contains the title of the paper and the names of coauthors, if any.

Subject	Author	Page
Algorithms		
A fast hardware data compression algorithm and some algorithmic extensions	Craft	733
Design considerations for the ALDC cores	Slattery	747
Performance as a function of compression	Kampf	759
The IBM JBIG–ABIC Verification Suite	Colyer	785
The Qx-coder	Slattery	767
Analytical models		
Modular nets (MNETS): A modular design methodology for computer timers	Matick	813
ASICs		
A decompression core for PowerPC	Kemp	807
A fast hardware data compression algorithm and some algorithmic extensions	Craft	733
A JBIG–ABIC compression engine for digital document processing	Marks	753
Data compression technology in ASIC cores	Burroughs	725
Design considerations for the ALDC cores	Slattery	747
Integrating the MPEG-2 subsystem for digital television	Anderson	795
Performance as a function of compression	Kampf	759
The IBM JBIG–ABIC Verification Suite	Colyer	785
The Qx-coder	Slattery	767
Beams, charged particle		
Terrestrial cosmic ray intensities	Ziegler	117
Chemical analysis		
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders	Horkans	621
Chemistry and chemical engineering		
Applications of electrochemical microfabrication: An introduction	Datta	563
Electrochemical process for advanced package fabrication	Krongelb	575
Electrolessly deposited diffusion barriers for microelectronics	O'Sullivan	607
Metallization by plating for high-performance multichip modules	Wong	587
Microfabrication by electrochemical metal removal	Datta	655
Photoelectrochemical etching of semiconductors	Kohl	629
Circuit and device technology		
Electrochemical microfabrication by laser-enhanced photothermal processes	von Gutfeld	639
Coding, arithmetic		
Data compression technology in ASIC cores	Burroughs	725
Multimedia—An introduction	Flynn	165
The Qx-coder	Slattery	767
Coding theory		
The Qx-coder	Slattery	767
Color		
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays	Libsch	467
Communications and communication networks		
Bamba—Audio and video streaming over the Internet	Willebeek-LeMair	269
Design of a video-server complex for interactive television	Sanuki	199
Multimedia—An introduction	Flynn	165
MultiMedia Digital Conferencing: A Web-enabled multimedia teleconferencing system	Bisdikian	281

Computer architecture
Tiger Shark—A scalable file system for multimedia — Haskin 185

Computer organization and design
Modular nets (MNETS): A modular design methodology for computer timers — Matick 813

Computer-aided design
Modular nets (MNETS): A modular design methodology for computer timers — Matick 813

Copper
Damascene copper electroplating for chip interconnections — Andricacos 567
Electrochemical process for advanced package fabrication — Krongelb 575
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan 607
Metallization by plating for high-performance multichip modules — Wong 587
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Corrosion
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Cosmic rays
Terrestrial cosmic ray intensities — Ziegler 117

Damascene process
Damascene copper electroplating for chip interconnections — Andricacos 567

Data compression
A decompression core for PowerPC — Kemp 807
A fast hardware data compression algorithm and some algorithmic extensions — Craft 733
A JBIG–ABIC compression engine for digital document processing — Marks 753
Bamba—Audio and video streaming over the Internet — Willebeek-Lemair 269
Data compression technology in ASIC cores — Burroughs 725
Design considerations for the ALDC cores — Slattery 747
Evolution and challenges in multimedia — Dan 177
Performance as a function of compression — Kampf 759
The Qx-coder — Slattery 767

Data, structures and accessing
A decompression core for PowerPC — Kemp 807
A fast hardware data compression algorithm and some algorithmic extensions — Craft 733
Data compression technology in ASIC cores — Burroughs 725
Design considerations for the ALDC cores — Slattery 747
Performance as a function of compression — Kampf 759
Progressive search and retrieval in large image archives — Castelli 253
The Qx-coder — Slattery 767
Video query: Research directions — Bolle 233
Video-server designs for supporting very large numbers of concurrent users — Kumar 219

Data transmission
A decompression core for PowerPC — Kemp 807
A fast hardware data compression algorithm and some algorithmic extensions — Craft 733
A JBIG–ABIC compression engine for digital document processing — Marks 753
Bamba—Audio and video streaming over the Internet — Willebeek-LeMair 269
Data compression technology in ASIC cores — Burroughs 725
Design considerations for the ALDC cores — Slattery 747
Performance as a function of compression — Kampf 759
Video-server designs for supporting very large numbers of concurrent users — Kumar 219

Databases
Progressive search and retrieval in large image archives — Castelli 253
Video query: Research directions — Bolle 233

Design automation
Modular nets (MNETS): A modular design methodology for computer timers — Matick 813

Design verification
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Diffraction gratings
Nematic LC modes and LC phase gratings for reflective spatial light modulators — Yang 401

Diffusion
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan 607

Digital libraries
Progressive search and retrieval in large image archives — Castelli 253

Display technology
A 10.5-in.-diagonal SXGA active-matrix display — Colgan 427
A new backlighting system using a polarizing light pipe — Tanase 527
Active line repair for thin-film-transistor liquid crystal displays — Wright 445
Aluminum-based gate structure for active-matrix liquid crystal displays — Arai 491
Contrast properties of reflective liquid crystal light valves in projection displays — Rosenbluth 359
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321
Driving method for gate-delay compensation of TFT/LCD — Kusafuka 459
Evaluation of Al(Nd)-alloy films for application to thin-film-transistor liquid crystal displays — Takatsuji 501

Increasing electronic display information content: An introduction — Alt — 315
Micropitch connection using anisotropic conductive materials for driver IC attachment to a liquid crystal display — Nishida — 517
On-chip metallization layers for reflective light valves — Colgan — 339
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany — 387
Silicon light-valve array chip for high-resolution reflective liquid crystal projection displays — Sanford — 347
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch — 467

Electrochemistry
Applications of electrochemical microfabrication: An introduction — Datta — 563
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld — 639
Electrochemical process for advanced package fabrication — Krongelb — 575
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan — 607
Future directions in electroplated materials for thin-film recording heads — Andricacos — 671
Integrated, variable-reluctance magnetic minimotor — O'Sullivan — 681
Metallization by plating for high-performance multichip modules — Wong — 587
Microfabrication by electrochemical metal removal — Datta — 655
Photoelectrochemical etching of semiconductors — Kohl — 629
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans — 621

Electrodeposition
Applications of electrochemical microfabrication: An introduction — Datta — 563
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan — 607
Future directions in electroplated materials for thin-film recording heads — Andricacos — 671
Integrated, variable-reluctance magnetic minimotor — O'Sullivan — 681

Electroless plating
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld — 639
Electrochemical process for advanced package fabrication — Krongelb — 575
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan — 607

Electro-optics
Design and fabrication of a prototype projection data monitor with high information content — Melcher — 321

Electroplating
Damascene copper electroplating for chip interconnections — Andricacos — 567
Metallization by plating for high-performance multichip modules — Wong — 587
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans — 621
Thin-film multichip module packages for high-end IBM servers — Perfecto — 597

Etching
Applications of electrochemical microfabrication: An introduction — Datta — 563
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld — 639
Microfabrication by electrochemical metal removal — Datta — 655
Photoelectrochemical etching of semiconductors — Kohl — 629

Fabrication
Applications of electrochemical microfabrication: An introduction — Datta — 563
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld — 639

File systems
Tiger Shark—A scalable file system for multimedia — Haskin — 185

Films, magnetic
Design, fabrication, and performance of spin-valve read heads for magnetic recording applications — Tsang — 103
Electronic states in magnetic nanostructures — Himpsel — 33
Future directions in electroplated materials for thin-film recording heads — Andricacos — 671
Magnetic properties of transition-metal multilayers studied with X-ray magnetic circular dichroism spectroscopy — Stöhr — 73
Magnetotransport in doped manganate perovskites — Sun — 89
Oscillatory magnetic properties — Allenspach — 7
The magic of magnetic multilayers — Parkin — 3
The role of molecular beam epitaxy in research on giant magnetoresistance and interlayer exchange coupling — Farrow — 43
Theory of exchange coupling in magnetic multilayers — Jones — 25
Theory of spin-dependent conductivity in GMR materials — Nesbet — 53

Films, metal
Aluminum-based gate structure for active-matrix liquid crystal displays — Arai — 491
Evaluation of Al(Nd)-alloy films for application to thin-film-transistor liquid crystal displays — Takatsuji — 501
On-chip metallization layers for reflective light valves — Colgan — 339

Films, permalloy
Future directions in electroplated materials for thin-film recording heads — Andricacos — 671
Integrated, variable-reluctance magnetic minimotor — O'Sullivan — 681

Films, thin
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji 509

Holography
A one-megapixel reflective spatial light modulator system for holographic storage — Sanford 411

Image processing
A fast hardware data compression algorithm and some algorithmic extensions — Craft 733
A JBIG–ABIC compression engine for digital document processing — Marks 753
Data compression technology in ASIC cores — Burroughs 725
Design considerations for the ALDC cores — Slattery 747
Design of a video-server complex for interactive television — Sanuki 199
Increasing electronic display information content: An introduction — Alt 315
Integrating the MPEG-2 subsystem for digital television — Anderson 795
Multimedia—An introduction — Flynn 165
Performance as a function of compression — Kampf 759
Progressive search and retrieval in large image archives — Castelli 253
The IBM JBIG–ABIC Verification Suite — Colyer 785
The Qx-coder — Slattery 767

Imaging technology
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien 537
Design of a video-server complex for interactive television — Sanuki 199
Multimedia—An introduction — Flynn 165

Information content
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321

Integrated circuit design
A decompression core for PowerPC — Kemp 807
A JBIG–ABIC compression engine for digital document processing — Marks 753

Integrated circuits
Active line repair for thin-film-transistor liquid crystal displays — Wright 445
Driving method for gate-delay compensation of TFT/LCD — Kusafuka 459
Micropitch connection using anisotropic conductive materials for driver IC attachment to a liquid crystal display — Nishida 517
Silicon light-valve array chip for high-resolution reflective liquid crystal projection displays — Sanford 347

Interconnection technology
Damascene copper electroplating for chip interconnections — Andricacos 567
Electrochemical process for advanced package fabrication — Krongelb 575
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan 607
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Ion beam bombardment
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien 537
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji 509

Lasers
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld 639

Lead
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans 621

Light
A new backlighting system using a polarizing light pipe — Tanase 527
A one-megapixel reflective spatial light modulator system for holographic storage — Sanford 411
Nematic LC modes and LC phase gratings for reflective spatial light modulators — Yang 401

Liquid crystals
A new backlighting system using a polarizing light pipe — Tanase 527
A one-megapixel reflective spatial light modulator system for holographic storage — Sanford 411
Active line repair for thin-film-transistor liquid crystal displays — Wright 445
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien 537
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321
Driving method for gate-delay compensation of TFT/LCD — Kusafuka 459
Increasing electronic display information content: An introduction — Alt 315
Micropitch connection using anisotropic conductive materials for driver IC attachment to a liquid crystal display — Nishida 517
Nematic LC modes and LC phase gratings for reflective spatial light modulators — Yang 401
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch 467

Lithography, X-ray
Integrated, variable-reluctance magnetic minimotor — O'Sullivan 681

Magnetic head design
Future directions in electroplated materials for thin-film recording heads — Andricacos 671

Magnetic recording
Design, fabrication, and performance of spin-valve read heads for magnetic recording applications — Tsang 103
The magic of magnetic multilayers — Parkin 3

Magnetics—studies and structures
Future directions in electroplated materials for thin-film recording heads — Andricacos 671

Magnetoresistance
Future directions in electroplated materials for thin-film recording heads — Andricacos 671

Manufacturing
Metallization by plating for high-performance multichip modules — Wong 587
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans 621
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Materials
Magnetotransport in doped manganate perovskites — Sun 89

Materials technology
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji 509

Mechanical design
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321

Metallurgy
Damascene copper electroplating for chip interconnections — Andricacos 567

Metrology
Thin-film-transistor process-characterization test structures — Colgan 481

Microelectromechanical systems (MEMS)
Applications of electrochemical microfabrication: An introduction — Datta 563
Integrated, variable-reluctance magnetic minimotor — O'Sullivan 681

Microelectronics
Applications of electrochemical microfabrication: An introduction — Datta 563
Microfabrication by electrochemical metal removal — Datta 655
Thin-film-transistor process-characterization test structures — Colgan 481

Microfabrication
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld 639

Micromachining
Microfabrication by electrochemical metal removal — Datta 655

Minimotors
Integrated, variable-reluctance magnetic minimotor — O'Sullivan 681

Models and modeling
Damascene copper electroplating for chip interconnections — Andricacos 567
Modular nets (MNETS): A modular design methodology for computer timers — Matick 813
Terrestrial cosmic ray intensities — Ziegler 117
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch 467

Multichip modules (MCMs)
Metallization by plating for high-performance multichip modules — Wong 587
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Multilevel structures
Electrochemical process for advanced package fabrication — Krongelb 575

Multimedia
Bamba—Audio and video streaming over the Internet — Willebeek-LeMair 269
Design of a video-server complex for interactive television — Sanuki 199
Evolution and challenges in multimedia — Dan 177
Integrating the MPEG-2 subsystem for digital television — Anderson 795
Multimedia—An introduction — Flynn 165
MultiMedia Digital Conferencing: A Web-enabled multimedia teleconferencing system — Bisdikian 281
Progressive search and retrieval in large image archives — Castelli 253
Tiger Shark—A scalable file system for multimedia — Haskin 185
Video query: Research directions — Bolle 233
Video-server designs for supporting very large numbers of concurrent users — Kumar 219

Nanoscale structures and devices
Electronic states in magnetic nanostructures — Himpsel 33

Networks
Bamba—Audio and video streaming over the Internet — Willebeek-LeMair 269
Evolution and challenges in multimedia — Dan 177
Video-server designs for supporting very large numbers of concurrent users — Kumar 219

Optical lithography
Integrated, variable-reluctance magnetic minimotor — O'Sullivan 681

Optical projection system
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Optical science and technology
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien 537

Design and fabrication of a prototype projection data monitor with high information content — Melcher 321
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld 639
Increasing electronic display information content: An introduction — Alt 315
Nematic LC modes and LC phase gratings for reflective spatial light modulators — Yang 401
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Optics
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien 537
Nematic LC modes and LC phase gratings for reflective spatial light modulators — Yang 401
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Optimization
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Packaging
Applications of electrochemical microfabrication: An introduction — Datta 563
Damascene copper electroplating for chip interconnections — Andricacos 567
Electrochemical process for advanced package fabrication — Krongelb 575
Metallization by plating for high-performance multichip modules — Wong 587
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Performance analysis
Projection display throughput: Efficiency of optical transmission and light-source collection — Doany 387

Photoelectrochemistry
Photoelectrochemical etching of semiconductors — Kohl 629

Photoprocesses
Photoelectrochemical etching of semiconductors — Kohl 629

Photothermal processes
Electrochemical microfabrication by laser-enhanced photothermal processes — von Gutfeld 639

Physical chemistry
Photoelectrochemical etching of semiconductors — Kohl 629

Physics
Contrast properties of reflective liquid crystal light valves in projection displays — Rosenbluth 359
Oscillatory magnetic properties — Allenspach 7
Terrestrial cosmic ray intensities — Ziegler 117

Physics, solid state
Photoelectrochemical etching of semiconductors — Kohl 629

Physics, theoretical
Theory of exchange coupling in magnetic multilayers — Jones 25
Theory of spin-dependent conductivity in GMR materials — Nesbet 53

Planarization
Electrochemical process for advanced package fabrication — Krongelb 575

Polarography
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans 621

Polymers
Electrochemical process for advanced package fabrication — Krongelb 575
Electrolessly deposited diffusion barriers for microelectronics — O'Sullivan 607
Metallization by plating for high-performance multichip modules — Wong 587
Thin-film multichip module packages for high-end IBM servers — Perfecto 597

Process control and development
Future directions in electroplated materials for thin-film recording heads — Andricacos 671
Integrated, variable-reluctance magnetic minimotor — O'Sullivan 681
Microfabrication by electrochemical metal removal — Datta 655
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans 621
Thin-film-transistor process-characterization test structures — Colgan 481

Recording technology
Future directions in electroplated materials for thin-film recording heads — Andricacos 671

Reduced-instruction-set computers (RISC)
Evolution and challenges in multimedia — Dan 177
Tiger Shark—A scalable file system for multimedia — Haskin 185

Reliability
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji 509

Resolution
Design and fabrication of a prototype projection data monitor with high information content — Melcher 321
Increasing electronic display information content: An introduction — Alt 315
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch 467

Semiconductors
Photoelectrochemical etching of semiconductors — Kohl 629

Semiconductors, III–V
Photoelectrochemical etching of semiconductors — Kohl — 629

Silicon
Photoelectrochemical etching of semiconductors — Kohl — 629

Simulation
Modular nets (MNETS): A modular design methodology for computer timers — Matick — 813
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch — 467

Soft errors
Terrestrial cosmic ray intensities — Ziegler — 117

Spectroscopy
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji — 509

Storage (computer) devices and systems
A one-megapixel reflective spatial light modulator system for holographic storage — Sanford — 411

Surface effects
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien — 537

Teleconferencing
MultiMedia Digital Conferencing: A Web-enabled multimedia teleconferencing system — Bisdikian — 281

Testing
Integrated, variable-reluctance magnetic minimotor — O'Sullivan — 681
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans — 621
Thin-film-transistor process-characterization test structures — Colgan — 481

Testing, chip
The IBM JBIG–ABIC Verification Suite — Colyer — 785

Tin
Polarographic methods of monitoring addition agents in the electroplating of Sn–Pb solders — Horkans — 621

Transistors, thin film (TFTs)
A new backlighting system using a polarizing light pipe — Tanase — 527
Active line repair for thin-film-transistor liquid crystal displays — Wright — 445
Active-matrix display using ion-beam-processed polyimide film for liquid crystal alignment — Lien — 537
Application of cross-sectional transmission electron microscopy to thin-film-transistor failure analysis — Tsuji — 509
Driving method for gate-delay compensation of TFT/LCD — Kusafuka — 459
Increasing electronic display information content: An introduction — Alt — 315
Micropitch connection using anisotropic conductive materials for driver IC attachment to a liquid crystal display — Nishida — 517
Thin-film-transistor process-characterization test structures — Colgan — 481
Understanding crosstalk in high-resolution color thin-film-transistor liquid crystal displays — Libsch — 467

Trenches, vias
Damascene copper electroplating for chip interconnections — Andricacos — 567

Video signals
Design of a video-server complex for interactive television — Sanuki — 199
Video query: Research directions — Bolle — 233
Video-server designs for supporting very large numbers of concurrent users — Kumar — 219

VLSI
Integrating the MPEG-2 subsystem for digital television — Anderson — 795

Addenda

The names of the following authors were omitted from the *Journal of Research and Development,* Volume 42, Number 3/4, May/July 1998.

R. R. Horton and H. Ifill, "Design and fabrication of a prototype projection data monitor with high information content," p. 321.

H.-S. P. Wong, "Silicon light-valve array chip for high-resolution reflective liquid crystal projection displays," p. 347.